# Appendix E – Cost Estimates

# Kanektok River Reroute
# Conceptual Design Report

Alternative No. 1

**Project Duration** **8** **weeks**

| ACTIVITY | NOTES | QUANTITY | UNIT | UNIT COST | TOTAL COST |
|---|---|---|---|---|---|
| **General** | | | | | |
| Per Diem | | 448 | day | $60 | $26,880 |
| Superintendent | | 8 | weeks | $6,000 | $48,000 |
| Project Manager | 8 hrs/week | 8 | weeks | $800 | $6,400 |
| Expeditor | 40 hrs/week | 8 | weeks | $2,800 | $22,400 |
| Roundtrip Air Fare | | 6 | each | $1,000 | $6,000 |
| Allowance for Misc Air Freight | | 1 | ls | $25,000 | $25,000 |
| Survey | | 1 | ls | $40,000 | $40,000 |
| Equipment Mobilization | | 1 | ls | $210,000 | $210,000 |
| Permit Monitor (Aquatic Resource Permit) | | 8 | weeks | $3,600 | $28,800 |
| | | | | | |
| **Equipment** | | | | | |
| Pickup (2 each) | Rental/Ownership Cost | 8 | weeks | $300 | $2,400 |
| Flatbed Truck | Rental/Ownership Cost | 8 | weeks | $500 | $4,000 |
| Note: Heavy Equipment Cost & Labor Included in Unit Costs for Earthwork | | | | | |
| | | | | | |
| **Other** | | | | | |
| Project Office | Office + equipment | 2 | months | $750 | $1,500 |
| Safety Equipment | | 1 | ls | $5,000 | $5,000 |
| Temporary Power | Generators for Tools | 2 | months | $500 | $1,000 |
| Hand tools, consumables, signage, porta cans, etc. | | 1 | ls | $35,000 | $35,000 |
| Fuel, oil and gas for equipment | | 2 | months | $1,500 | $3,000 |
| | | | | | |
| **Housing** | | | | | |
| Housing | | 2 | months | $10,000 | $20,000 |
| Utilities | | 2 | months | $1,500 | $3,000 |
| | | | | | |
| **Insurance** | | | | | |
| Certified Payroll Fee | | 1 | ls | $5,000 | $5,000 |
| | | | | | |
| **Channel Reroute** | | | | | |
| Clearing and Grubbing | | 3 | AC | $10,800 | $28,760 |
| Excavation | | 40,000 | CY | $10 | $400,000 |
| Bulk Bags & Nets | | 1 | LS | $15,000 | $15,000 |
| Berm Construction | | 1,700 | CY | $4 | $6,800 |
| Spoils Placement | | 38,300 | CY | $4 | $153,200 |
| Seeding on Spoils | | 180 | MSF | $60 | $10,800 |
| Erosion Control on Spoils | | 180 | MSF | $440 | $79,200 |
| | | | | | |
| **Project Closeout** | | | | | |
| Asbuilts Survey | | 1 | ls | $15,000 | $15,000 |
| Demobilization | | 1 | ls | $50,000 | $50,000 |

| | | | |
|---|---|---|---|
| | | Subtotal | $1,252,000 |
| General Contractor Overhead and Profit | 15.0% | | $188,000 |
| General Contractor Bond & Insurance | 3.0% | | $38,000 |
| Estimating Contingency | 15.0% | | $188,000 |
| Inflation | 3.5% | | $44,000 |
| | | Construction Subtotal | $1,710,000 |
| Design and Permitting | 15.0% | | $257,000 |
| Construction Administration | 8.0% | | $137,000 |
| Grant Administration | 2.0% | | $35,000 |
| **Estimated Total Cost (Alternative No. 1)** | | | **$2,139,000** |

**Kanektok River Reroute**
**Benefit Cost Analysis**

**Estimated Benefits of River Reoute**

**1) Potential School Protection**

Assume 750 LF of riprap revetment or similar armoring may be needed if the river approaches the school

| Item | Quantity | Unit | Unit Cost | Amount | Notes |
|---|---|---|---|---|---|
| Riprap Armoring | 750 | LF | $2,000 | $ 1,500,000 | Based on 2019 Study costs for riprap |

**2) Avoided costs of new road to gravel site**

New 1 mile gravel road to the borrow pit site

| Item | Quantity | Unit | Unit Cost | Amount | Notes |
|---|---|---|---|---|---|
| Gravel Access Road | 5280 | FT | $ 275 | $ 1,452,000 | Estimated using SDS Calculator with annual 3% Inflation |

**3) Avoided impacts to private property**

There are 5 homes between the old runwy and the school area.

| Item | Quantity | Unit | Unit Cost | Amount | Notes |
|---|---|---|---|---|---|
| Residential Structure | 5 | EA | $ 250,000 | $ 1,250,000 | Does not includes steam houses or other sheds |

| | | |
|---|---|---|
| $ | 4,202,000 | Total Estimated Benefit of the Kanektok River Reroute |
| $ | 2,139,000 | Total Estimated Cost of the Kanektok River Reroute |
| | 2.0 | Resulting BCA |

**Estimated Cost of New Gravel Road to Borrow Source**

SDS Calculator - Estimated Costs

Village
Quinhagak

| Item No. | Line Item Description | Unit | Estimated Quantity | Adjusted Unit Cost | Total Cost |
|---|---|---|---|---|---|
| 1 | Household water and sewer plumbing | EA | 0 | #DIV/0! | 0 |
| 2 | Sewage collection mains or services (gravity or force), buried | LF | 0 | #DIV/0! | 0 |
| 3 | Sewage collection mains or services (gravity or force), above ground | LF | 0 | #DIV/0! | 0 |
| 4 | Sewage lift station | EA | 0 | #DIV/0! | 0 |
| 5 | Vacuum sewer plant, no foundation | SF | 0 | #DIV/0! | 0 |
| 6 | Septic tank, and drainfield, individual household | EA | 0 | #DIV/0! | 0 |
| 7 | Septic tank, community | EA | 0 | #DIV/0! | 0 |
| 8 | Drainfield, community | SF | 0 | #DIV/0! | 0 |
| 9 | Utilidors, above ground, including water and sewer, mains or services | LF | 0 | #DIV/0! | 0 |
| 10 | Sewage lagoon, barrow, local material | Acre | 0 | #DIV/0! | 0 |
| 11 | Sewage ocean outfall | LF | 0 | #DIV/0! | 0 |
| 12 | Water distribution, mains or services, above ground | LF | 0 | #DIV/0! | 0 |
| 13 | Water distribution, mains or services, buried | LF | 0 | #DIV/0! | 0 |
| 14 | Water storage tank, no foundation | Gal | 0 | #DIV/0! | 0 |
| 15 | Water treatment plant, no foundation | SF | 0 | #DIV/0! | 0 |
| 16 | Washeteria, no foundation | SF | 0 | #DIV/0! | 0 |
| 17 | Foundation - conventional, local gravel material | SF | 0 | #DIV/0! | 0 |
| 18 | Foundation - freeze back piles | SF | 0 | #DIV/0! | 0 |
| 19 | Foundation - thermosyphen stablized gravel pad | SF | 0 | #DIV/0! | 0 |
| 20 | Boardwalk | LF | 0 | #DIV/0! | 0 |
| 21 | Road, local gravel source | LF | 5280 | $ 153.43 | $ 810,094 |
| 22 | Water source - surface water intake | EA | 0 | #DIV/0! | $ - |
| 23 | Water source - ground water well | EA | 0 | #DIV/0! | $ - |
| 24 | Solid waste site - closure, local material | Acre | 0 | #DIV/0! | $ - |
| 25 | Solid waste site - development, local material w/ equipment | Acre | 0 | #DIV/0! | $ - |
| 26 | Shop / Garage, no foundation, concrete floor | SF | 0 | #DIV/0! | $ - |
| | | | | | $ 810,094 |
| | Updated with 20 years of Inflation @ 3% | | | | $ 1,463,120 |
| | Cost per LF | | | | $ 275 |